The Mediating Role of Export-Oriented Japanese Foreign Direct Investment in China

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Since the early nineties, China has become the largest destination of Japanese foreign direct investment (FDI). Observing this trend, we have analyzed whether Japanese FDI did promote exports from China to the rest of the world, and more importantly, whether this is a strategy adopted by Japanese multinationals to penetrate not only the Chinese market but also the global market. Our analysis takes into account, not only the direct effects of FDI on exports, but also the indirect effects, by examining the mediating role of export oriented Japanese FDI in China from 1998 to 2007 through panel analysis. The study contributes to the conceptual framework of indirect relationship among the macroeconomic variables, FDI and exports and provides some insights of export oriented Japanese FDI's strategy in creating a win-win platform for Japan and China.

Keywords: Foreign direct investment, exports, panel analysis, indirect effects

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1. INTRODUCTION

China's economic growth has been driven by foreign direct investment (FDI) and exports. Since early nineties, part of the growth has resulted from aggressive volumes of Japanese FDI (Japan External Trade Organization). The bulk of the Japanese FDI inflow into China is in the manufacturing sector as shown in Table 1.

Table 1: Japan's FDI in China

Year	Manufacturing (US$million)	Share of manufacturing FDI in total FDI from Japan to China (%)	Non-manufacturing (US$million)	Share of non-manufacturing FDI in total FDI from Japan to China (%)	Total FDI from Japan to China (US$million)
1998	792.9	75.35	242.23	23.02	1,052.31
1999	547.95	72.71	174.25	23.12	753.65
2000	793.77	76.78	237.66	22.99	1,033.84
2001	1,321.97	88.33	172.29	11.51	1,496.71
2002	1,365.06	79.53	234.99	13.69	1,716.48
2003	2,392.56	79.06	608.99	19.87	3,065.21
2004	3,758.17	82.84	586.77	12.93	4,536.77
2005	5,112.52	77.58	1477.31	22.42	6,589.84
2006	4,875.32	79.06	1,291.49	20.94	6,166.81
2007	4,181.66	67.43	2,018.68	32.55	6,201.19

Source: UNCTAD

These Japanese firms have set up production bases in China to reduce production costs and avoid trade barriers in order to create a win-win platform for both Japan and China as Japanese affiliates in China can sell their goods in China and export their goods to Japan or other countries. From Figure 1, Japanese manufacturing affiliates' sales in China, exports to Japan and exports to the rest of the world have shown an increasing trend from 2002 to 2007. The exports of Japanese manufacturing affiliates in China to Japan surpassed that to the rest of the world since 2002.

Despite the Asian Financial Crisis in 1997, sales of Japanese affiliates in China within China far exceed exports to Japan and to other countries thus exhibiting the growing size of the Chinese market. This may however be partly due to the economic slow-down in the US economy since 2000. The export-led growth model seems have slacked off for China due to decreasing external demand. At the same time, China has boosted their domestic market through domestic consumption and FDI. This dichotomy has raised the question of whether China will become the production base for Japan to penetrate not only the world market but mainly the growing domestic Chinese market

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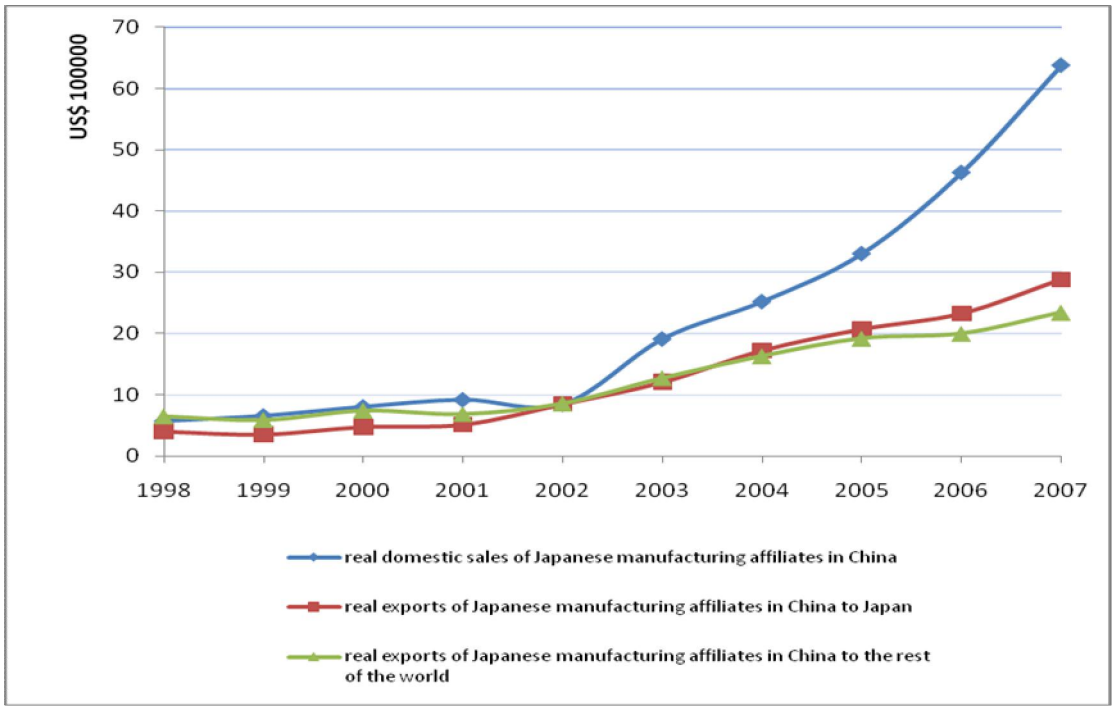
Figure 1: Sales of Japanese Manufacturing affiliates in China and Exports to Japan and to the Rest of the World (1998-2007)



Source: Authors' calculation based on the data obtained from Ministry of Economy, Trade and Industry, Japan (METI) which include food and tobacco, textiles, chemicals, metals, industry machinery, electrical machinery, transportation equipment and others.

Table 2: Exports of China, 1998-2007

Year	Total Exports (US$million)	Exports growth rate (%)
1998	183,712	-
1999	194,931	6.11
2000	249,203	27.84
2001	266,098	6.78
2002	325,596	22.36
2003	438,228	34.59
2004	593,326	35.39
2005	761,953	28.42
2006	969,380	27.22
2007	1,217,790	25.63

Source: International Financial Statistics

Besides that, the examination of causal relationships between FDI and exports is vital for development policy. If there is a causality from FDI to exports, FDI will act as conduits for exports expansion, *vice versa*. This implies that increasing Japanese FDI in China will increase the exports of Japanese affiliates in China and the total exports of China. However, this also has raised the question of whether Japanese FDI in China is hollowing out the domestic industry in Japan.

There is a growing body of literature on the relationships of FDI and exports for China's exports demand (Liu *et al*., 2001; Zhang and Felmingham, 2001; Zhang and Song, 2000; Sun, 2001, Jin *et al*., 2008; Xing and Zhao, 2008; Yu and Zhao, 2008; Chen and Wang, 2007). However, the linkages (i.e. unidirectional or bidirectional relationships) between FDI and exports in China's exports demand model are relatively understudied. Liu *et al*. (2001) and Zhang and Felmingham (2001) studied the causal relationships between FDI and export based on multivariate and bivariate exports demand model of China respectively. They have, however, excluded the

standard explanatory variables (i.e. income and price) in the examination of exports demand behavior. Liu *et al*. (2001) highlighted that although multivariate Granger causality tests has been conducted to examine the causal relationships among three variables (i.e. FDI, exports and imports) based on vector autoregressive (VAR) analysis, the results should be interpreted with caution. This is because Granger causality does not imply that one variable is the effect or the result of another, but refers to the precedence of one variable over the others (Liu *et al*., 2001, p.199). Thus, the linkages between FDI and exports will become more complex when an additional explanatory variable is added into the analysis.

Besides that, the linkages between FDI and exports are complex as the determinants of both FDI (e.g. Blonigen, 2005; Sun *et al*., 2002; Cassidy and Callaghan, 2006; Kang and Lee, 2007) and exports (e.g. Xing and Zhao, 2008; Kiyota and Urata, 2008; Vukšić, 2005; Kumar, 2009; Liu *et al*., 2001; Zhang and Felmingham, 2001; Sun, 2001; Zhang and Song, 2000; Camarero and Tamarit, 2004) are overlapping. In addition, previous studies have examined the direct relationships between FDI and exports (Dritsaki *et al*., 2004; Apergis, 2008; Alguacil *et al*. 2002, Wong and Tang, 2009). The indirect effects among the macroeconomic variables, FDI and exports have been widely discussed theoretically but the empirical evidence is rather scarce. Therefore, we aim to contribute to the conceptual framework and empirical evidence of the indirect relationships among the macroeconomic variables, FDI and exports and also to provide some insights into the new strategy of exports which incorporates the mediating role of FDI. In particular, we apply panel analysis to examine the exports performance of Japanese manufacturing affiliates in China from 1998-2007.

This paper is structured as follows: the development of the conceptual framework is described in Section 2, which is followed by a description of the methodology in Section 3. The empirical analyses are discussed in Section 4. Finally, conclusions are presented in Section 5.

2. CONCEPTUAL FRAMEWORK

We have examined the indirect relationships among macroeconomic variables and exports by taking into account of the mediating role of export-oriented Japanese FDI in China. Mediation refers to the effect of an explanatory variable on a dependent variable transmitted through a mediator variable (Edward and Lambert, 2007, p.1). According to Hair *et al*. (2006) and Mackinnon *et al*. (2002), mediation refers to an indirect effect. The terms mediated effects and indirect effects have a relatively long tradition in social sciences (Baron and Kenny, 1986; Wang *et al*, 2009; Swenson, 2004; Bransletter, 2006), and are used interchangeably. The meaning of mediation can be illustrated in Diagrams 1 and 2 as a model for depicting a causal chain.

Diagram 1: Causal Chain Involved in Mediation

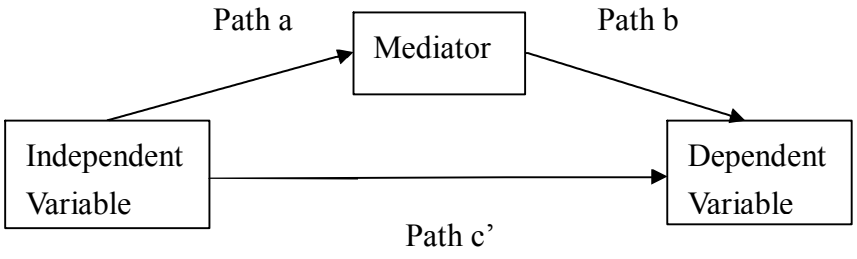
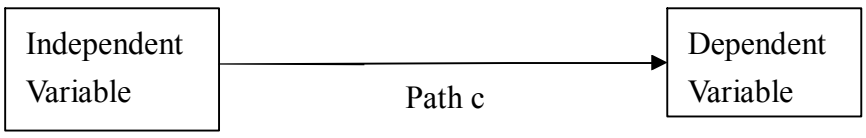


Diagram 2: Causal Chain Without Mediator

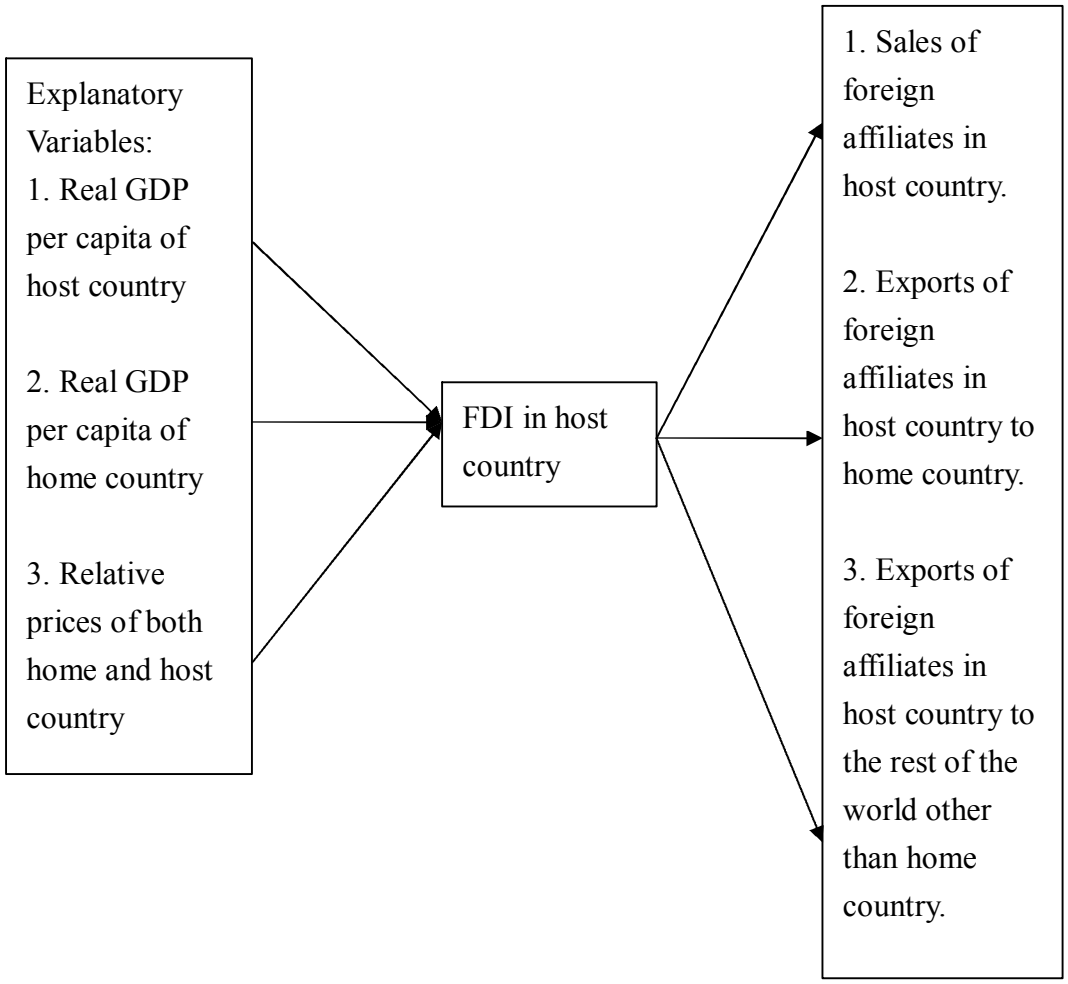


Past studies had analyzed the relationships between FDI and exports based on the model illustrated in Diagram 2. In addition, in previous studies, the exports demand and FDI models uses the same determinants (i.e. income and price). Past trade theories had evolved from traditional Heckscher-Ohlin framework (H-O) to Markusen (1984) and Helpman (1984) and had emphasized the importance of FDI in international trade. The central proposition of H-O framework assumed that the international mobility of factors of production could equalize factor process across countries. In the conventional view of the Mundell (1957) model, the relationships between international trade and factor movements are substitutes rather than compliments. Markusen (1983) provides explanations of complementary effects between factors movements and international trade. The new trade theories in Markusen (1984) and Helpman (1984) suggest that efficiency-seeking FDI may have mainly complementary relationships with trade, and market-seeking FDI will have substituting relationships with trade. FDI will endogenously improve the efficiency of host country indirectly through the diffusion of new technologies and management practices. This is expected to bring about a dynamic change in the comparative advantage of a country resulting from FDI and in turn change the structure of international trade.

The potential mediators should be identified on theoretical grounds (Holmbek, 1997) and can be changed (Mackinnon *et al*., 2000). The standard demand theory of exports is a function of income and relative prices and the new trade theory has incorporated the importance of FDI in determining the export growth of a country. However, there is no clear guide to include the appropriate set of variables in predicting FDI inflow into a country based on theoretical framework. Hermes and Lensink (2003) explained that the explanatory variables included for FDI models

depend very much on the aim of the study and the insight and belief of the researcher. Therefore, FDI is chosen as the mediator variable rather than exports. Hence, the conceptual framework of this study is developed based on the bilateral exports demand model which includes the standard explanatory variables of income and relative prices to examine the indirect effects relationship among the macroeconomic variables, FDI and exports (Diagram 3). The conceptual framework is developed to examine the Japanese FDI strategy in penetrating not only the market of China but also the world market.

Diagram 3: Conceptual Framework



3. METHODOLOGY

Three models based on the proposed conceptual framework to assess whether Japan is able to penetrate both the China and world markets and also whether Japanese FDI in China is hollowing out domestic firms in Japan are developed as follows:

$$X_{cit} = \beta_{oit} + c' Z_{1it} + bFDI_{it} + e_{it} \quad (1)$$

$$X_{jit} = \beta_{oit} + c' Z_{2it} + bFDI_{it} + e_{it} \quad (2)$$

$$X_{rit} = \beta_{0it} + c' Z_{2it} + bFDI_{it} + e_{it} \quad (3)$$

where

X_c is the real domestic sales of Japanese manufacturing affiliates in China

X_j is the real exports of Japanese manufacturing affiliates in China to Japan

X_r is the real exports of Japanese manufacturing affiliates in China to the rest of the world

Z_1 comprises the explanatory variables of *PGDPC, PGDPJ* and *P*, where

PGDPC is the manufacturing industry's real domestic product per capita of China

PGDPJ is the manufacturing industry's real domestic product per capita of Japan

P is the relative consumer price index of the respective manufacturing industry in China and Japan multiplied with the exchange rate between Japan and China.

Z_2 has the same set of explanatory variables as Z_1

Z_3 comprises the explanatory variables of *PGDPW, PGDPC* and *P*, where

PGDPW is the world manufacturing industry's real domestic products per capita

P is the relative consumer price index of the respective manufacturing industry in China and the world consumer price index multiple with the exchange rate between U.S and China.

FDI is the Japanese manufacturing FDI in China

e's are the error terms

β_0 's are the intercept terms

a,b,c and *c'* are the coefficients of the explanatory variables

i is the manufacturing industry which includes food and tobacco, textiles, chemicals, metals, industry machinery, electrical machinery, transportation equipment and others.

All variables are in the form of natural logarithms based on the constant price of 2005=100 and in U.S. dollar. Data of the real domestic sales of Japanese manufacturing affiliates in China, the real exports of Japanese manufacturing affiliates in China to Japan and to rest of the world are collected from METI. FDI data is obtained from UNCTAD and the others are from Euromonitor International to ensure consistency. Due mainly to data availability, the analysis period is confined to 1998 to 2007. In addition, it is interesting to examine the short run dynamics that traces the post Asian financial crisis time-path of exports. Therefore, this study uses panel analysis.

The mediation analysis is conducted by using the multiple regression analysis suggested by Baron and Kenny (1986) and Kenny *et al*. (1998). Four regressions are estimated for each model as follows:

$X_{it} = \beta_{oit} + cZ_{it} + e_{0it}$, shown by path c in Diagram 2 (4)

$FDI_{it} = \beta_{1it} + aZ_{it} + e_{1it}$, shown by path a in Diagram 1 (5)

$X_{it} = \beta_{2it} + bFDI_{it} + e_{2it}$, shown by path b in Diagram 1 (6)

$X_{it} = \beta_{3it} + c'Z_{1it} + bFDI_{it} + e_{3it}$, shown by path c' in Diagram 1 (7)

A variable acts as a mediator when *c, a* and *b* in Equations (4) to (7) are significant. Then, a significance test for the indirect effect of the explanatory variable on dependent variable through the mediator (*FDI*) can be obtained by hand-calculable

statistical *z*-test proposed by Baron and Kenny (1986) as follows:

$$\frac{ab}{\sqrt{b^2 S_a{}^2 + a^2 S_b{}^2 + S_a{}^2 S_b{}^2}}$$

where,

a is the coefficient of the explanatory variable to mediator

b is the coefficient of the mediator to dependent variable

S_a is the standard error of *a*

S_b is the standard error of *b*

$\sqrt{b^2 S_a{}^2 + a^2 S_b{}^2 + S_a{}^2 S_b{}^2}$ is the standard error of indirect effect estimate

Table 3 shows the differences among the full mediator, partial mediator and "not a mediator".

Table 3: Type of Mediator

Full Mediator	Partial Mediator	Not a mediator
Require the full effect of independent variable on dependent variable be carried by the mediator	The explanatory variables may have their own direct effects on dependent variable that independent of the mediator.	The effect of explanatory variable on dependent variable is not caused by the mediator.
b is significant in Equation (7)	*b* is significant in Equation (7)	*b* could be significant or insignificant in Equation (7)
c is significant in Equation (4)	*c* is significant in Equation (4)	*c* is significant in Equation (4)
c′ is not significant in Equation (7)	*c′* is significant in Equation (7) but the coefficient of c' is smaller in Equation (7) as compared to the coefficient of c in Equation (4)	*c′* is significant in Equation (7) and the coefficient of *c* and *c'* in Equations (4) and (7) respectively, are the same.

Note: The definition of mediation is from Ryu *et al*. (2009)

4. RESULTS

Three models are examined in this study. Multiple regression analysis (Equations 4 to 7) for each model has been estimated to examine the mediating role of Japanese export-oriented FDI in China. The mediating roles of Japanese FDI in penetrating China's market are revealed in the results summarized in Tables 4 and 5, which shows the results for Model 1 in Equation (1). As in Table 4, the estimation for Equation (4) has a low adjusted R^2 as compared to Equation (4) in Table 5. Therefore, Model 1 has been re-estimated by dropping the insignificant variable of *PGDPJ*. Thus, the determinants of Japanese manufacturing goods demand in China are the China's real GDP per capita, relative prices and Japanese FDI (see Table 5). The results in Table 5 show that the explanatory power in equation 4 has improved. Therefore, the model in Table 5 is preferred. From the findings, it is interesting to note that the estimated explanatory variables (i.e. *PGDP* and *P*) in Equation 4 become insignificant when Japanese FDI is included in Equation 7. On the other hand, the estimated coefficient of Japanese FDI is found to be significant in predicting the demand of Japanese manufacturing affiliates' goods in China (Equation 6). Therefore, we strongly believe that, Japanese FDI could have act as a mediator in predicting their sales in China. According to Baron and Kenny (1986), before making inferences from the model regarding its mediating effects, the estimated coefficients in Equations 4, 5 and 6 must be significant. Based on Table 3, full mediation is established when the mediator (FDI) is significant in Equation 7 and the previously significant estimated coefficient of explanatory variable (i.e. *PGDPC* and *P*) in Equation 4 are insignificant in Equation 7. The significance test for the indirect effects of the explanatory variable on dependent variable based on Baron and Kenny (1986) is reported in Table 5. Hence, Japanese FDI is found to be a full mediator between China's real gross domestic products per capita (*PGDPC*) and the

sale of Japanese manufacturing affiliates in China, and between relative prices and Japanese manufacturing affiliates sales in China. From the findings, the estimated income elasticity of demand is found to be elastic (1.1042) and the estimated price elasticity of demand is found to be inelastic (-0.2284). The estimated coefficient of *FDI* (0.7639) shows that FDI will increase the sales of Japanese manufacturing in China significantly. This implies that Japanese FDI has successfully penetrated the market of China through FDI and there is an indirect effect between the macroeconomic variables and exports.

Table 4: Results for Model 1 (Equation 1)

Independent Variables	Equation (4)	Equation (5)	Equation (6)	Equation (7)
C			4.1590*** [0.7989] (5.206)	
PGDPC	1.1596*** [0.2163] (5.362)	1.4590*** [0.1865] (7.821)		0.2320 [0.2502] (0.927)
PGDPJ	0.7869 [0.6559] (1.200)	0.3488 [0.5658] (0.616)		0.5652 [0.5540] (1.020)
P	-3.1121*** [1.1258] (-2.764)	-2.9275*** [0.9711] (-3.015)		-1.2510 [1.0089] (-1.240)
FDI			0.7639*** [0.07826] (9.761)	0.6357*** [0.1176] (5.408)
R^2	0.3998	0.7025	0.7834	0.7943
Adjusted-R^2	0.3762	0.6594	0.7589	0.7611
LM Test	61.91	47.32	93.30	48.77
Hausman Test	2.49	11.07	0.29	1.62
Model	Fixed effect	Fixed effect	Random effect	Fixed effect

Note: *** and ** denote statistically significant at 1% and 5% respectively. Standard error is provided in [ ]. *t*-statistics is provided in ( ) for fixed effect panel model., *z*- statistics is provided in ( ) for random effect panel model.

Table 5: Results for Model 1 (Equation 1)

Independent Variables	Equation (4)	Equation (5)	Equation (6)	Equation (7)	Baron and Kenny (1986) estimation
C			4.1590*** [0.7989] (5.206)		
PGDPC	1.1381*** [0.2174] (5.234)	1.4455*** [0.1863] (7.761)		0.205 [0.2489] (0.824)	1.1042*** [0.1824] (6.0531)
P	-0.2284*** [0.0733] (-3.114)	-0.2033*** [0.0628] (-3.237)		-0.0971 [0.0659] (-1.472)	-0.1553*** [0.0508] (-3.058)
FDI			0.7639*** [0.0784] (9.761)	0.6455*** [0.1171] (5.512)	
R^2	0.6992	0.6999	0.7834	0.7911	
Adjusted-R^2	0.6605	0.6614	0.7589	0.7609	
LM Test	86.76	67.64	93.30	51.71	
Hausman Test	1.35	9.04	0.29	3.03	
Model	Fixed effect	Fixed effect	Random effect	Fixed effect	

Note: *** and ** denote statistically significant at 1% and 5% respectively. Standard error is provided in [ ]. *t*-statistics is provided in ( ) for fixed effect panel model,. *z*- statistics is provided in ( ) for random effect panel model and Barron and Kenny (1986) test statistic.

In order to examine whether Japanese FDI in China is hollowing out the domestic firms in Japan, Model 2 (Equation 2) is estimated. The results are shown in Tables 6 and 7. The results in Table 6 is preferred as all estimated equations have relatively high explanatory power and correct signs for the estimated coefficient when *PGDPJ* is included in the estimation. We found that Japanese real domestic product contributes insignificantly to FDI inflow in China. The findings of the study are consistent with Yu and Zhao (2008) who found that Japanese FDI in China will increase the China's exports to Japan. This study also supports previous studies

citing a positive relationship between FDI and exports in China (Sun, 2001; Dritsaki *et al*, 2004; Zhang and Song, 2000; Liu *et al*, 2001; Zhang and Felmingham, 2001). In accordance with the criteria recommended by Baron and Kenny (1986) in Table 3, Japanese FDI is found to be a partial mediator in promoting bilateral China-Japan exports flow. It is interesting to note that the estimated price elasticity of demand which takes into account of the impact of exchange rate, wage and capital differentials between China and Japan, is elastic (-1.5295). This implies that depreciation in Chinese RMB will increase the exports of Japanese manufacturing affiliates in China to Japan which in turn hurt the domestic firms in Japan.

Table 6: Results for Model 2 (Equation 2)

Independent Variables	Equation (4)	Equation (5)	Equation (6)	Equation (7)	Baron and Kenny (1986) estimation
PGDPC	1.4169*** [0.1580] (8.969)	1.4590*** [0.1865] (7.821)		0.8038*** [0.1898] (4.235)	0.5872*** [0.1497] (3.923)
PGDPJ	0.1644 [0.4791] (0.343)	0.3488 [0.5658] (0.616)		0.178 [0.4202] (0.042)	0.0169 [0.3086] (0.055)
P	-3.3239*** [0.8224] (-4.042	-2.9275*** [0.9711] (-3.015)		-2.0938*** [0.7652] (-2.736)	-1.5295*** [0.5794] (2.640)
FDI			0.7305*** [0.0684] (10.684)	0.4202*** [0.0892] (4.713)	
R^2	0.9005	0.7025	0.8998	0.925	
Adjusted-R^2	0.8861	0.6594	0.8855	0.9129	
LM Test	189.20	47.32	225.77	160.21	
Hausman Test	5.25	11.07	0.80	5.24	
Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect	

Note: *** and ** denote statistically significant at 1% and 5% respectively. Standard error is provided in [ ]. *t*-statistics is provided in ( ) for fixed effect panel model,. *z*- statistics is provided in ( ) for Barron and Kenny (1986) test statistic.

Table 7: Results for Model 2 (Equation 2)

Independent Variables	Equation (4)	Equation (5)	Equation (6)	Equation (7)
PGDPJ	-0.0685 [0.06983] (-0.098)	0.1122 [0.7703] (0.146)		-0.1444 [0.4678] (-0.309)
P	-0.3037*** [0.0791] (-3.841)	-0.2795*** [0.0873] (-3.204)		-0.1145*** [0.0567] (-2.019)
FDI			0.7305*** [0.0684] (10.684)	0.6770*** [0.0726] (9.328)
R^2	0.7861	0.4419	0.8998	0.7911
Adjusted-R^2	0.7586	0.3702	0.8855	0.7609
LM Test	145.16	21.07	225.77	179.89
Hausman Test	5.67	4.56	0.80	4.28
Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect

Note: *** and ** denote statistically significant at 1% and 5% respectively. Standard error is provided in [ ]. *t*-statistics is provided in ( ).

We further our analysis to examine Japan's strategy in penetrating the market of other countries through FDI in China. Model 3 (Equation 3) is estimated and the results are summarized in Tables 8 and 9. We found that Japanese FDI is not a mediator for Japanese MNEs in China to penetrate the market of other countries, but the estimated coefficient of FDI is a significant positive value (0.7305) based on the bivariate FDI-exports model in Equation 6. Furthermore, the estimated coefficients for relative price, China's and the world's real domestic products per capita have the expected signs and significance in Equations 4, 5 and 7, except *PGDPW* in Equation 5. This implies that Japan could have established a strong network (e.g., economic, political and social relationships) with other countries that encourage Japan to set up their production bases in China to gain the benefits of comparative advantage of China and to avoid trade barriers. Therefore, the network effect is important in

international trade analysis (Greaney, 2003, 2005, 2009; Rauch, 1996; McLaren, 1999; Casella and Rauch, 2002; Spencer and Qiu, 2001). The findings also show that the depreciation of RMB will increase the Japanese manufacturing affiliates in China to other countries.

Table 8: Results for Model 3 (Equation 3)

Independent Variables	Equation (4)	Equation (5)	Equation (6)	Equation (7)
C		14.13867*** [4.2301] (3.342)		
PGDPW	2.7118** [1.1342] (2.391)	-0.2010 [0.4708] (-0.427)		2.7116** [1.1425] (2.373)
PGDPC	0.7426*** [0.2699] (2.751)	0.4792** [0.2176] (2.202)		0.7409** [0.2804] (2.642)
P	-2.1939*** [0.4351] (-5.042)	-2.2769*** [0.3701] (-6.153)		-2.1872*** [0.5198] (-4.207)
FDI			0.7312*** [0.1059] (6.973)	0.0031 [0.1279] (0.024)
R^2	0.9312	0.7551	0.8724	0.9312
Adjusted-R^2	0.9212	0.7196	0.8580	0.9200
LM Test	264.01	101.17	160.77	103.51
Hausman Test	5.93	0.27	3.51	15.47
Model	Fixed effect	Random effect	Fixed effect	Fixed effect

Note: *** and ** denote statistically significant at 1% and 5% respectively. Standard error is provided in [ ]. *t*-statistics is provided in ( ) for fixed effect panel model,. *z*- statistics is provided in ( ) for random effect panel model.

Table 9: Results for Model 3 (Equation 3)

Independent Variables	Equation (4)	Equation (5)	Equation (6)	Equation (7)
C		14.5302*** [4.3578] (3.334)		
PGDPW	3.2158*** [1.1706] (2.747)	0.18165 [0.4514] (0.6874)		3.1790*** [1.1766] (2.702)
P	-3.0661*** [0.3117] (-9.838)	-2.8248*** [0.2805] (-10.069)		-2.8245*** [0.4800] (-5.884)
FDI			0.7312*** [0.1059] (6.973)	0.0858 [0.1293] (0.664)
R^2	0.9236	0.7395	0.8724	0.9241
Adjusted-R^2	0.9138	0.7060	0.8580	0.9131
LM Test	283.20	103.64	160.77	117.24
Hausman Test	5.58	0.40	3.51	14.36
Model	Fixed effect	Random effect	Fixed effect	Fixed effect

Note: *** and ** denote statistically significant at 1% and 5% respectively. Standard error is provided in [ ]. *t*-statistics is provided in ( ) for fixed effect panel model,. *z*- statistics is provided in ( ) for random effect panel model.

Overall, we noted that the estimated coefficients of Japanese manufacturing affiliates in China with significant value are inelastic in all models. This shows that Japanese FDI in China is found to be market-seeking and efficiency-seeking where efficiency-seeking is dominating the market-seeking effects. The depreciation of RMB will hurt the domestic firms in Japan but increase the exports of Japanese manufacturing affiliates in China to other countries. Some insights are drawn from this study to provide suggestions to form a win-win platform for both Japan and China as follows: (1) depreciation of RMB could increase the exports of Japanese manufacturing affiliates in China to Japan and to other countries as well as increase

the sales of Japanese manufacturing affiliates in China; (2) increase import tariffs of Japan to safeguard the domestic firms; (3) China continues to appear to have comparative advantage in labor-intensive product or for assembly trades; (4) China should provide incentives to attract Japanese FDI for domestic development as Japan has also invested heavily in India and ASEAN countries in 2007 (JETRO). The implementation of the above insights, some of which are contradictory in effects, need to be balanced in nature.

5. CONCLUSIONS

In conclusion, this study contributes to both conceptual and empirical evidence to examine the mediating role of export-oriented Japanese FDI in China. The empirical results indicate that there are indirect relationships between the macroeconomic variables and exports. Japan and China are vertically integrated as the significant estimated coefficient of Japanese FDI is positive and inelastic. Japanese FDI in China is found to be a full mediator to increase the sales of Japanese manufacturing affiliates in China. This indicates that Japanese FDI act as main conduits for Japan to penetrate the market of China. The results show that Japanese FDI in China increases the sales of Japanese manufacturing affiliates in China and their exports to other countries. Japanese FDI in China exhibits both market-seeking and efficiency seeking purposes where efficiency seeking effects dominates market-seeking effects. As network effects could have led to Japanese FDI in China, the mediating role of trade flows remains to be examined in future research study.

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